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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/686,931 | 10/16/2003 | Hans-Joerg Zobel | 163-44 | 4574 |
| 23869 | 7590 | 10/04/2004 | | EXAMINER |
| | | | | PATEL, HARSHAD R |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2855 | |

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/686,931 | ZOBEL ET AL. | |
| | Examiner | Art Unit | |
| | Harshad Patel | 2855 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-23 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 October 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/27/03, 11/7/03.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

Specification

1. The disclosure is objected to because of the following informalities: As described on page 7, line 10, R₅ is not shown in Fig. 2. As described on page 10, lines 27-29, output of closed loop controller (32) is not connected to the current driver (44). Appropriate correction is required.

Drawings

2. The drawings are objected to because numerals 40 and 42 are labeling the same element in Fig. 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 7-10, 12-15, 18-20, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith (6,343,514).

Smith teaches a flow sensor comprising a flexible membrane (104) and a plurality of sensors operatively connected to the membrane wherein at least one sensor (42) detects the ambient temperature, at least one sensor (41) detects the pressure and at least one sensor (col. 5, lines 8-9) detects the flow.

5. Claims 1-4, 7-10, 12-16, 18-20, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ugai et al. (5,259,248) (hereinafter Ugai).

Ugai teaches a multisensor comprising a flexible membrane (9), and a plurality of sensors (1-8, 30) for detecting ambient temperature, pressure and flow (col. 7, lines 21-42; Fig. 5). The device includes a wafer (10) including a cavity and a substrate (11) bonded to the wafer.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5-7, 11, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ugai in view of Kinnard et al.(5,393,351) (hereinafter Kinnard).

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Ugai teaches all the features of the instant invention except for the silicon dioxide isolation layer provided between the sensors and the membrane or the flow rate sensor to be a constant temperature anemometer. Kinnard teaches a thermal anemometric device and a plurality of isolation layers provided between the sensors and the membrane. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide such isolation layers since providing such a layer would provide high thermal efficiency, low dielectric loss and high mechanical stability.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Amano et al. (5,503,034), Jahn et al. (6,542,761) and Bernini (6,652,029) teach various sensing devices having a plurality of sensor formed on a flexible membrane.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harshad Patel whose telephone number is (571) 272-2187. The examiner can normally be reached on Monday-Thursday (7:00 AM-5:30 PM).



*Harshad Patel
Primary Examiner
Art Unit 2855*

hp
September 29, 2004